CLAIMS

What is claimed is:

1   1.   An application programming interface for providing data mining functionality

2   comprising:

3   a first layer providing an interface with an application program; and

4   a second layer implementing data mining functionality, the second layer

5   comprising:

6   a data mining object repository maintaining data mining metadata,

7   a plurality of data mining project objects, each data mining project

8   object containing data mining objects created and used by a user,

9   a plurality of data mining session objects, each data mining session

10   object containing data mining processing performed on behalf of a user,

11   a plurality of data mining tables, each data mining table mapping a

12   table or a view in a database,

13   a plurality of data transformation objects, each data transformation

14   object defining computations or manipulations to be performed on data in the

15   database,

16   a plurality of data mining models, each data mining model

17   implementing conditions and decisions, and

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1   a plurality of data mining result objects, each data mining result object

2   generated as a result of scoring or analyzing a data mining model or an input

3   dataset.

1 2.   The application programming interface of claim 1, further comprising a

2 plurality of data mining settings objects, each data mining settings object specifying

3 a type of model to build and function and model building algorithm specific

4 parameters.

1 3.   The application programming interface of claim 2, wherein the first layer is a

2 client-side layer operable to execute on a client computer system.

1 4.   The application programming interface of claim 3, wherein the second layer

2 is server-side layer operable to execute on a server computer system.

1 5.   The application programming interface of claim 4, wherein the first layer and

2 the second layer are implemented in the Java programming language.

1 6.   The application programming interface of claim 5, wherein the database

2 comprises training data to be used to train the data mining models.

1 7. The application programming interface of claim 6, wherein the database

2 comprises test and evaluation data to be used to test and evaluate the data mining

3 models.

1 8. The application programming interface of claim 7, wherein the database

2 comprises scoring data to be used to score the data mining models.

1 9. The application programming interface of claim 8, wherein each data mining

2 project object maintains a name space within which data mining objects are named.

1 10. The application programming interface of claim 9, wherein a data mining

2 project object may be shared among users.

1 11. The application programming interface of claim 10, wherein the data mining

2 table objects are included in the data mining object repository.

1 12. The application programming interface of claim 11, wherein each data

2 mining table includes a set of columns of data mining data and associated metadata.

1 13. The application programming interface of claim 12, wherein each data

2 mining transformation object performs data transformations on a data mining table, a

3   data column in a data mining table, a data row in a data mining table, or a value in a

4   data row or a data column in a data mining table.

1   14.   The application programming interface of claim 13, wherein each data

2   mining transformation object comprises metadata.

1   15.   The application programming interface of claim 14, wherein each data

2   mining settings object comprises metadata.

1   16.   The application programming interface of claim 15, wherein each data

2   mining model comprises metadata.

1   17.   The application programming interface of claim 16, further comprising a

2   plurality of schema view objects, each schema view object providing access to a data

3   table in the data mining object repository.

1   18.   A computer program product for use in an electronic data processing system,

2   comprising:

3   a computer readable medium;

4   computer program instructions, recorded on the computer readable medium,

5   executable by a processor, for implementing an application programming interface

6   for providing data mining functionality comprising:

7   a first layer providing an interface with an application program; and

8   a second layer implementing data mining functionality, the second layer

9   comprising:

10   a data mining object repository maintaining data mining metadata,

11   a plurality of data mining project objects, each data mining project

12   object containing data mining objects created and used by a user,

13   a plurality of data mining session objects, each data mining session

14   object containing data mining processing performed on behalf of a user,

15   a plurality of data mining tables, each data mining table mapping a

16   table or a view in a database,

17   a plurality of data transformation objects, each data transformation

18   object defining computations or manipulations to be performed on data in the

19   database,

20   a plurality of data mining models, each data mining model

21   implementing conditions and decisions, and

22   a plurality of data mining result objects, each data mining result object

23   generated as a result of scoring or analyzing a data mining model or an input

24   dataset.

1   19.   The application programming interface of claim 16, further comprising a

2   plurality of data mining settings objects, each data mining settings object specifying

3   a type of model to build and function and model building algorithm specific

4   parameters.

1   20.   The computer program product of claim 17, wherein the first layer is a client-

2   side layer operable to execute on a client computer system.

1   21.   The computer program product of claim 18, wherein the second layer is a

2   server-side layer operable to execute on a server computer system.

1   22.   The computer program product of claim 19, wherein the first layer and the

2   second layer are implemented in the Java programming language.

1   23.   The computer program product of claim 20, wherein the database comprises

2   training data to be used to train the data mining models.

1   24.   The application programming interface of claim 21, wherein the database

2   comprises test and evaluation data to be used to test and evaluate the data mining

3   models.

1   25.   The computer program product of claim 22, wherein the database comprises

2   scoring data to be used to score the data mining models.

1   26.   The computer program product of claim 23, wherein each data mining project

2   object maintains a name space within which data mining objects are named.

1   27.   The computer program product of claim 24, wherein a data mining project

2   object may be shared among users.

1   28.   The computer program product of claim 25, wherein the data mining table

2   objects are included in the data mining object repository.

1   29.   The computer program product of claim 26, wherein each data mining table

2   includes a set of columns of data mining data and associated metadata.

1   30.   The computer program product of claim 27, wherein each data mining

2   transformation object performs data transformations on a data mining table, a data

3   column in a data mining table, a data row in a data mining table, or a value in a data

4   row or a data column in a data mining table.

1   31.   The computer program product of claim 30, wherein each data mining

2   transformation object comprises metadata.

1   32.   The computer program product of claim 31, wherein each data mining

2   settings object comprises metadata.

1   33.   The computer program product of claim 32, wherein each data mining model

2   comprises metadata.

1   34.   The computer program product of claim 33, further comprising a plurality of

2   schema view objects, each schema view object providing access to a data table in the

3   data mining object repository.

1   35.   The computer program product of claim 34, further comprising a plurality of

2   data mining settings objects, each data mining settings object specifying parameters

3   for building a particular type of data mining model.

1   36.   A system for implementing an application programming interface for

2   providing data mining functionality comprising:

3   a processor operable to execute computer program instructions; and

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4   a memory operable to store computer program instructions executable by

5   the processor, the computer program instructions implementing an application

6   programming interface for providing data mining functionality comprising:

7   a first layer providing an interface with an application program; and

8   a second layer implementing data mining functionality, the second layer

9   comprising:

10   a data mining object repository maintaining data mining metadata,

11   a plurality of data mining project objects, each data mining project

12   object containing data mining objects created and used by a user,

13   a plurality of data mining session objects, each data mining session

14   object containing data mining processing performed on behalf of a user,

15   a plurality of data mining tables, each data mining table mapping a

16   table or a view in a database,

17   a plurality of data transformation objects, each data transformation

18   object defining computations or manipulations to be performed on data in the

19   database,

20   a plurality of data mining models, each data mining model

21   implementing conditions and decisions, and

22   a plurality of data mining result objects, each data mining result object

23   generated as a result of scoring or analyzing a data mining model or an input

24   dataset.

1   37.   The system of claim 32, further comprising a plurality of data mining settings

2   objects, each data mining settings object specifying a type of model to build and

3   function and model building algorithm specific parameters.

1   38.   The system of claim 33, wherein the first layer is a client-side layer operable

2   to execute on a client computer system.

1   39.   The system of claim 34, wherein the second layer is server-side layer operable

2   to execute on a server computer system.

1   40.   The system of claim 35, wherein the first layer and the second layer are

2   implemented in the Java programming language.

1   41.   The system of claim 36, wherein the database comprises training data to be

2   used to train the data mining models.

1   42.   The system of claim 37, wherein the database comprises test and evaluation

2   data to be used to test and evaluate the data mining models.

1   43.   The system of claim 38, wherein the database comprises scoring data to be

2   used to score the data mining models.

1   44.   The system of claim 39, wherein each data mining project object maintains a

2   name space within which data mining objects are named.

1   45.   The system of claim 40, wherein a data mining project object may be shared

2   among users.

1   46.   The system of claim 41, wherein the data mining table objects are included in

2   the data mining object repository.

1   47.   The system of claim 42, wherein each data mining table includes a set of

2   columns of data mining data and associated metadata.

1   48.   The system of claim 43, wherein each data mining transformation object

2   performs data transformations on a data mining table, a data column in a data mining

3   table, a data row in a data mining table, or a value in a data row or a data column in a

4   data mining table.

1   49.   The system of claim 48, wherein each data mining transformation object

2   comprises metadata.

1   50.   The system of claim 49, wherein each data mining settings object comprises

2   metadata.

1   51.   The system of claim 50, wherein each data mining model comprises

2   metadata.

1   52.   The system of claim 51, further comprising a plurality of schema view

2   objects, each schema view object providing access to a data table in the data mining

3   object repository.